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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/800,301

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James W. Thompson

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02/06/2006

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EXAMINER

PREVIL, DANIEL

ART UNIT

PAPER NUMBER

2636

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/800,301

Applicant(s)

THOMPSON ET AL.

Examiner

Daniel Previl

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 28 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/29/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

This action is responsive to communication filed on November 28, 2005.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6, 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galloway (US 6,388,575) in view of Doany (US 6,377,203).

Regarding claim 1, Galloway discloses a method of locating multiple passive electronic marker types (abstract) comprising: transmitting a signal (col. 3, line 67- col. 4, line 1) at each of a plurality of frequencies (col. 4, lines 20-23); receiving a signal from a plurality of markers (col. 4, lines 2-26 ); and determining a marker type for each of the plurality of markers based upon receiving (col. 4, lines 1-40; col. 3, lines 33-47).

Galloway discloses all the limitations above but fails to specify simultaneously.

However, Doany discloses simultaneously (col. 4, lines 3-9).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Doany's simultaneously in Galloway. Doing so would transmit simultaneously signals related to the passive electronic markers to avoid delay thereby preventing interference from signals wherein each signal

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can be transmitted successfully to enhance the system performance as taught by Doany (col. 4, lines 25-40).

Regarding claim 2, Galloway discloses the step of determining a frequency distribution of a received signal (col. 4, lines 18-25).

Regarding claim 3, Galloway discloses the step of passing the received signal through a plurality of parallel narrow-band filters (fig. 3; col. 4, lines 18-56).

Regarding claim 4, Galloway discloses the step of performing a Fourier Transform on the received signal (fig. 4; col. 4, lines 57-66).

Regarding claim 5, Galloway discloses the step of performing synchronous detection on the received signal (the shift register has a clock that can transmit the information at the same time) (col. 4, line 62; col. 5, lines 44-46).

Regarding claim 6, Galloway discloses the step of sequentially processing the received signal with in-phase and phase-shifted reference frequencies (col. 5, lines 14-27).

Regarding claim 8, Galloway discloses the step of displaying the identity of a located marker responsive to determining (provided to the operator in visual, audible or other forms) (col. 4, lines 6-9).

Regarding claim 9, Galloway discloses the step of displaying received signal strength for all marker (provided to the operator the received signal for those marker that are to be used adjacent to valves) (col. 4, lines 5-13).

3. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galloway (US 6,388,575) in view of Alkire et al. (US 6,356,082) and further in view of Doany (US 6,377,203).

Regarding claim 10, Galloway discloses method of locating multiple passive electronic marker types (abstract) comprising: transmitting at each of a plurality of marker type frequencies (fig. 2; col. 3, lines 61-67; col. 4, lines 1-40; col. 5, lines 24-27); receiving a signal at each of a plurality of marker type frequencies (col. 4, lines 1-40).

Galloway discloses all the limitations above but to specify the step of determining an amplitude value for each marker type frequency received responsive to transmit and receive; simultaneously.

However, Alkire discloses the step of determining an amplitude value for each marker type frequency received responsive to transmit and receive (col. 7, lines 27-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Alkire's amplitude value in Galloway. Doing so would modify Galloway's system with amplitude value of Alkire in order to transmit accurately the position of underground objects, thereby locating easily the buried objects for a better and quicker service wherein time and money can save as taught by Alkire (col. 1, lines 6-64).

Furthermore, Doany discloses simultaneously (col. 4, lines 3-9).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Doany's simultaneously in Galloway and Alkire. Doing so would transmit simultaneously signals related to the passive electronic markers to avoid delay thereby preventing interference from signals wherein each signal can be transmitted successfully to enhance the system performance as taught by Doany (col. 4, lines 25-40).

Regarding claim 11, Galloway, Alkire and Doany disclose all the limitations in claim 10 and Alkire further discloses displaying a marker type associated with the greatest amplitude value responsive to determining (col. 7, lines 27-37). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Alkire's amplitude value in Galloway and Doany. Doing so would modify Galloway and Doany's system with amplitude value of Alkire in order to transmit accurately the position of underground objects, thereby locating easily the buried objects for a better and quicker service wherein time and money can save as taught by Alkire (col. 1, lines 6-64).

Regarding claim 12, Galloway, Alkire and Doany disclose all the limitations in claim 10 and Alkire further discloses displaying an amplitude for each marker (col. 7, lines 27-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Alkire's amplitude value in Galloway and Doany. Doing so would modify

Galloway and Doany's system with amplitude value of Alkire in order to transmit accurately the position of underground objects, thereby locating easily the buried objects for a better and quicker service wherein time and money can save as taught by Alkire (col. 1, lines 6-64).

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-6, 8-12 have been considered but are moot in view of the new ground(s) of rejection.

According to Applicant's argument on page 4 "Galloway does not disclose the step of transmitting and receiving from a plurality of markers". The examiner respectfully disagrees with the Applicant because Galloway clearly discloses the transmitter can produce plural signals, each of a selected frequency (col. 4, lines 20-23). In addition, Galloway discloses a group of markers (col. 4, lines 10-13). For at least the above reason, the rejection of claims 1-6, 8-12 is sustained.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Conclusion***

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Turner (US 5,056,454) discloses utility locator.

Eslambolchi et al. (US 5,844,405) discloses method and apparatus for locating utility conveyances in an enclosed area.

Rippingale (US 4,818,944) discloses magnetic locating and tracing system and method using dual-antenna transmitter to distinguish between concealed adjacent objects.

Parkinson et al. (US 5,430,379) discloses a conductor locator adapter for electronic markers.

Eslambolchi et al. (US 5,644,237) discloses a method and apparatus for precisely locating buried utility conveyance.

Schlapp et al. (US 6,954,072) discloses procedure and device for radiating and detecting the plurality of frequencies of electronic markers.



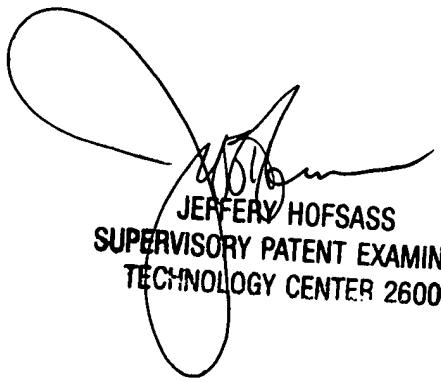
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Previl whose telephone number is (571) 272-2971. The examiner can normally be reached on Monday-Thursday. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on (571) 272-2981. The fax phone number for the organization where this application or proceeding is assigned is 571 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Previl  
Examiner  
Art Unit 2636

DP  
January 26, 2006.



JEFFERY HOFSSASS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600